REMARKS/ARGUMENTS

Claims 9 to 25 were pending in this application prior to this amendment. Claims 9 to 13 and 15-25 were rejected in the Office Action. Claim 14 was objected to. Applicant has cancelled claims 13 and 14, amended claims 9, 15, 17, 18, 22 and 25 and added new claims 26 to 31. No new matter has been introduced. Reconsideration of claims 9-25 and allowance of claims 9-12 and 15-31 is hereby respectfully requested.

Claim Rejections – 35 U.S.C. §112

1. Claims 17-25 were rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The specification fails to teach the R groups are groups of non-polymeric character. In addition, Claims 17-25 were rejected under 35 U.S.C. 112, first paragraph because the specification, does not provide enablement for the R groups being of non polymeric character.

The Applicants have amended claims 17 and 18 so that the feature "groups of non polymeric character" has been deleted. In claim 17, this feature has been replaced by the following feature: "groups exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms, for reducing cuttings accretion and bit balling". In claim 18, it has been replaced by the following feature: "groups exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms". These features are disclosed in the specification and said specification does provide enablement for the R groups hence defined.

Therefore, claims 17, 18 and claims 19-25 depending on claim 17, now comply with 35 U.S.C. 112, first paragraph.

2. Claims 15, 16 and 22 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite.

Claim 15 has been amended so that it does not depend from another claim. Therefore, claim 16, depending from claim 15, and claim 15, do comply with 35 U.S.C. 112.

Claim 22 has been amended so that the word "reactive" has been deleted. Therefore, Claim 22 does comply with 35 U.S.C. 112.

Claim Rejections – 35 U.S.C. § 102

3. In the Office Action, claims 9, 10, 13, 15, 16, 17, 21, 22 and 25 were rejected under 35 U.S.C. 102(e) as being clearly anticipated by Malchow (5807811). In addition, claims 9-12, 15 and 16 were rejected under 35 U.S.C. 102(b) as being anticipated by GB 2293373.

As proposed by the examiner in paragraph 9 of the Official Action, claim 9 has now been restricted to a drilling fluid comprising:

> ...a shale swelling inhibition agent comprising phosphate or silicate based compounds...

that is to say to the claimed features of claim 14 and 13.

Therefore, claim 9, and claims 10-12 and 26-36 depending from claim 9, now comply with 35 U.S.C. § 102.

Claim 15 has been restricted to a method comprising a step of preparing a drilling comprising:

> ...a shale swelling inhibition agent comprising phosphate or silicate based compounds...

that is to say to the claimed features of claim 14 and 13.

Therefore, claim 15, and claim 16 depending on claim 15, comply with 35 U.S.C. 102.

Claim 17 has been amended so that it now recites in part that the drilling fluid of the invention comprises and additive:

...for reducing cuttings accretion and bit balling...

This is not taught by neither Malchow, nor by GB'373.

Claim 17, and claims 18-24 depending from claim 17, are thus not anticipated by these documents.

Claim 25 has been amended so that it now recites in part that the method of drilling of the invention comprises a step of using an additive:

...for preventing accretion of cutting in said borehole...

This is not taught by neither Malchow, nor by GB'373.

Thus, claim 25 is not anticipated by these documents.

CONCLUSION

In light of the above amendments and remarks, the Applicant believes that the present application and claims 9-12 and 15-31 are in proper condition for allowance. Such allowance is hereby requested.

Attached hereto is a marked-up version of the changes made to the claims and a **clean version of the claims**. The marked-up version is captioned "**Version with markings to show changes made**".

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW THE CHANGES MADE

Claims 9, 15, 17, 18, 22 and 25 have been amended as follows:

9. A drilling fluid comprising

water as base component;

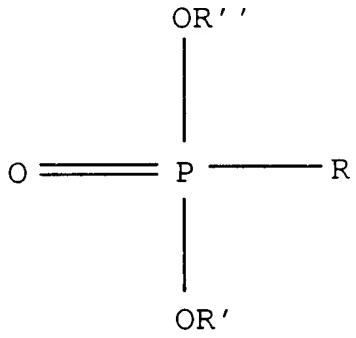
a viscosifying agent to increase the viscosity of the fluid;

a filtrate reducing agent;

a weighting agent to adjust the density of the fluid;

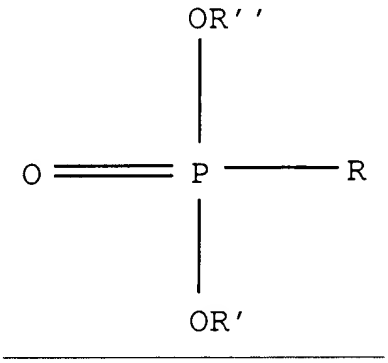
a shale swelling inhibition agent comprising phosphate or silicate based compounds ; and

an additive for a drilling fluid, consisting of a compound in accordance with the formula



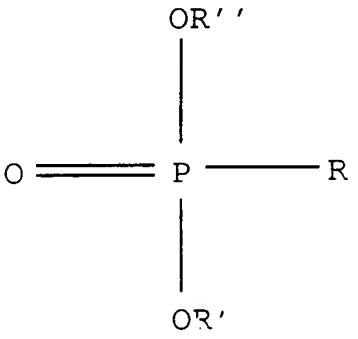
wherein R, R' and R" are radicals exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms.

15. A method of preventing accretion of cuttings in a borehole, said method comprising the step of preparing~~adding to~~ a drilling fluid comprising a viscosifying agent to increase the viscosity of the fluid, a filtrate reducing agent, a weighting agent to adjust the density of the fluid, a shale swelling inhibition agent comprising phosphate or silicate based compounds and an additive for a drilling fluid, consisting of a compound in accordance with the formula



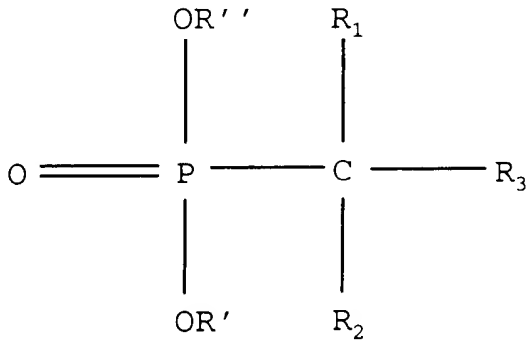
wherein R, R' and R" are radicals exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms~~an additive in accordance with claim 1 prior to or during a drilling operation~~.

17. A drilling fluid being water-based and having an inhibitive component to reduce the hydration of shale further comprising an additive in accordance with the formula



where R, R' and R" are groups exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms, for reducing cuttings accretion and bit balling~~of non-polymeric character~~.

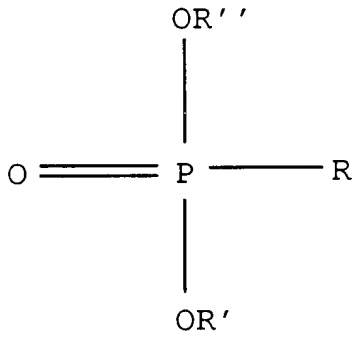
18. The drilling fluid of claim 17, comprising an additive in accordance with the formula



where R_1, R_2 and R_3 are groups exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms~~of non-polymeric character~~.

22. The drilling fluid of claim 17, being an ~~reactive~~ anionic drilling fluid.

25. A method of drilling~~preventing accretion of cuttings in~~ a borehole, said method comprising the step of using an additive consisting of a compound in accordance with the formula



wherein R, R' and R" are radicals exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms in a drilling fluid ~~in accordance with claim 17~~ during a drilling operation, for preventing accretion of cuttings in said borehole.

Claims 26-31 as follows, have been added:

26. The drilling fluid of claim 9, wherein the additive is based on a phosphor derivative of the succinic acid.

27. The drilling fluid of claim 9, wherein the additive is based on a short phosphorylated hydrocarbon.

28. The drilling fluid of claim 9, comprising the additive in a concentration of up to about 10% weight by volume.

29. The drilling fluid of claim 9, being an anionic drilling fluid.

30. The drilling fluid of claim 9, wherein the shale swelling inhibition agent comprises phosphate based compounds.

31. The drilling fluid of claim 9, wherein the shale swelling inhibition agent comprises silicate based compounds.

CLEAN VERSION OF THE CLAIMS

9. A drilling fluid comprising

water as base component;

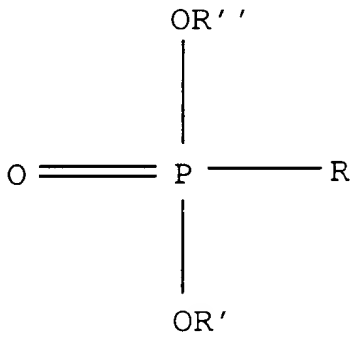
a viscosifying agent to increase the viscosity of the fluid;

a filtrate reducing agent;

a weighting agent to adjust the density of the fluid;

a shale swelling inhibition agent comprising phosphate or silicate based compounds ; and

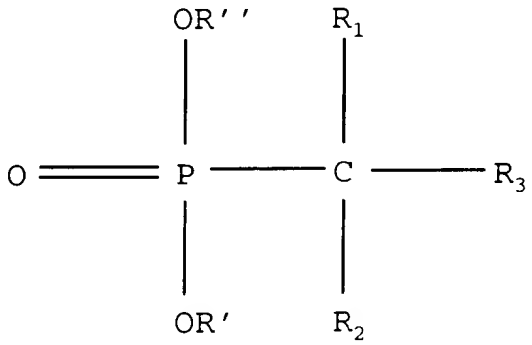
an additive for a drilling fluid, consisting of a compound in accordance with the formula



wherein R, R' and R" are radicals exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms.

10. The drilling fluid of claim 9, wherein R, R' and R" are radicals exclusiveiy containing H atoms or combinations of H, C or O.

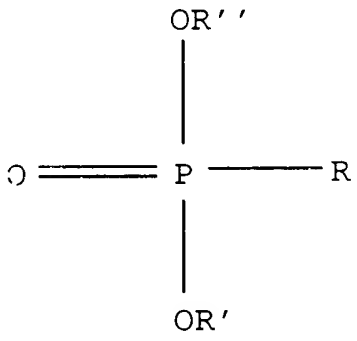
11. The drilling fluid of claim 9, wherein the additive consists of a compound in accordance with the formula



wherein R_1, R_2 and R_3 are radicals exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms.

12. The drilling fluid of claim 11, wherein R_1, R_2 and R_3 are radicals exclusively containing H atoms or combinations of H, C or O.

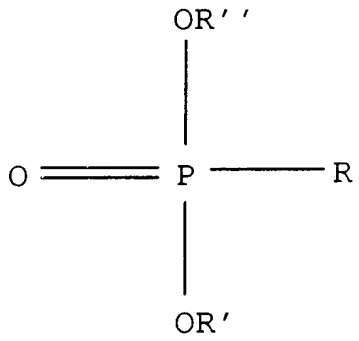
15. A method of preventing accretion of cuttings in a borehole, said method comprising the step of preparing a drilling fluid comprising a viscosifying agent to increase the viscosity of the fluid, a filtrate reducing agent, a weighting agent to adjust the density of the fluid, a shale swelling inhibition agent comprising phosphate or silicate based compounds and an additive for a drilling fluid, consisting of a compound in accordance with the formula



wherein R, R' and R" are radicals exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms.

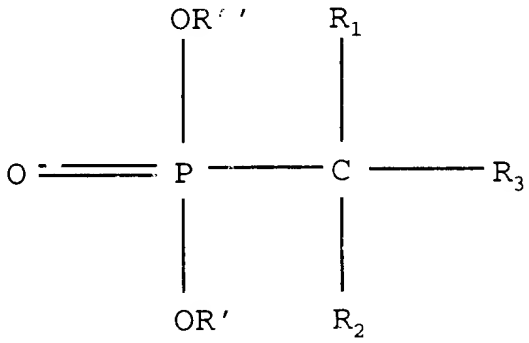
16. The method of claim 15, wherein the additive is added in a concentration of up to about 10% weight by volume of the drilling fluid.

17. A drilling fluid being water-based and having an inhibitive component to reduce the hydration of shale further comprising an additive in accordance with the formula



where R, R' and R" are groups exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms, for reducing cuttings accretion and bit balling.

18. The drilling fluid of claim 17, comprising an additive in accordance with the formula



where R_1, R_2 and R_3 are groups exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms.

19. The drilling fluid of claim 17, wherein the additive is based on a phosphor derivative of the succinic acid.

20. The drilling fluid of claim 17, wherein the additive is based on a short phosphorylated hydrocarbon.

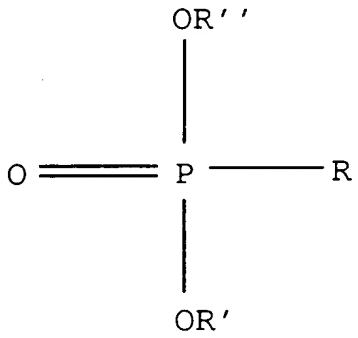
20. The drilling fluid of claim 17, comprising the additive in a concentration of up to about 10% weight by volume.

21. The drilling fluid of claim 17, being an anionic drilling fluid.

22. The drilling fluid of claim 17, being a phosphate-based drilling fluid.

23. The drilling fluid of claim 21, being a silicate-based drilling fluid.

25. A method of drilling a borehole, said method comprising the step of using an additive consisting of a compound in accordance with the formula



wherein R, R' and R" are radicals exclusively containing H atoms or combinations of H, C, O or P atoms up to a maximum of 100 atoms in a drilling fluid during a drilling operation, for preventing accretion of cuttings in said borehole.

26. The drilling fluid of claim 9, wherein the additive is based on a phosphor derivative of the succinic acid.

27. The drilling fluid of claim 9, wherein the additive is based on a short phosphorylated hydrocarbon.

28. The drilling fluid of claim 9, comprising the additive in a concentration of up to about 10% weight by volume.

29. The drilling fluid of claim 9, being an anionic drilling fluid.

30. The drilling fluid of claim 9, wherein the shale swelling inhibition agent comprises phosphate based compounds.

31. The drilling fluid of claim 9, wherein the shale swelling inhibition agent comprises silicate based compounds.